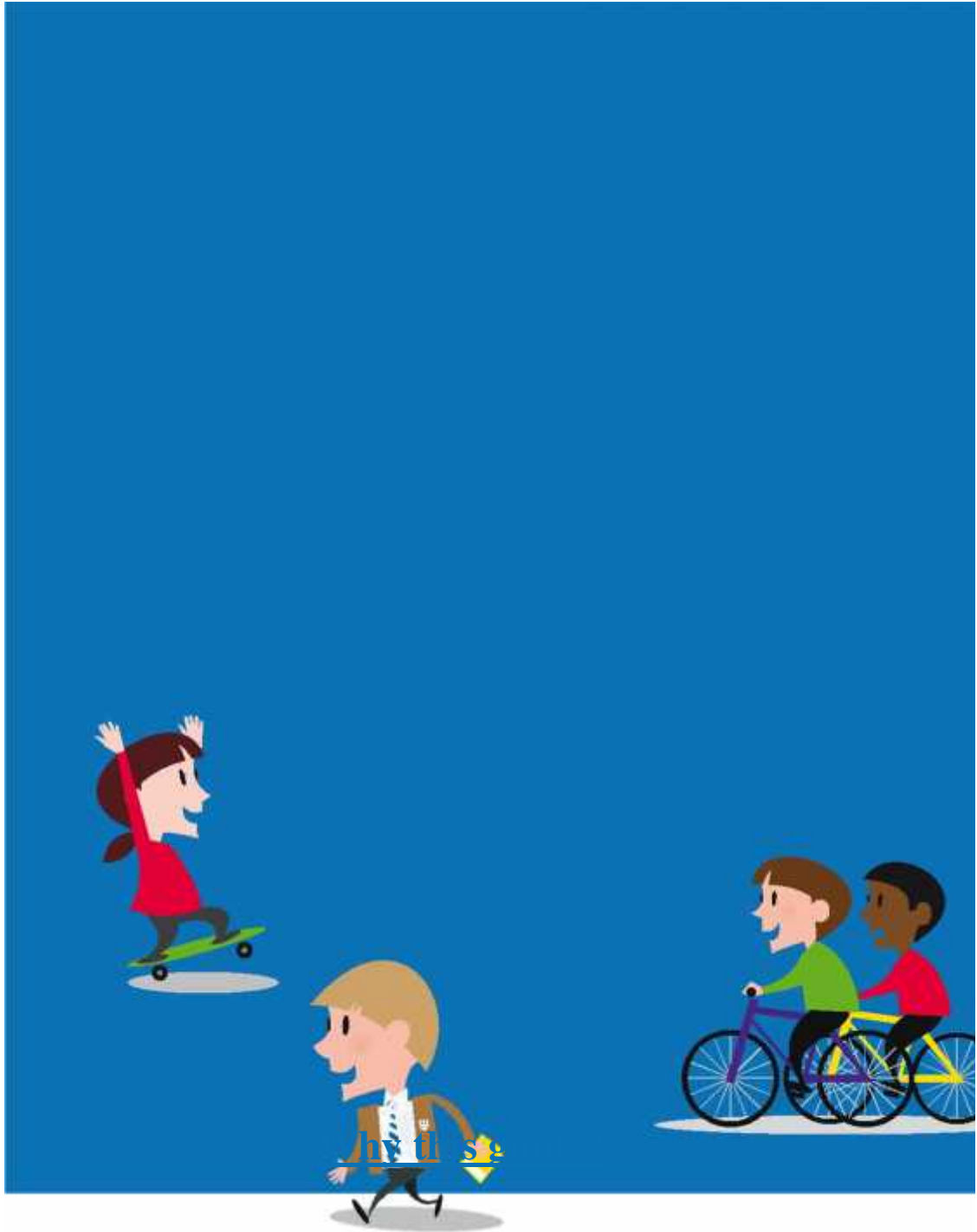


Helping my child at home in maths

What can I do at home to help



This guide helps parents and carers understand what you can do with your child to support their development in maths at home and help them make progress.

You will find this guide helpful when discussing your child's progress with their teachers.

Please read this guide alongside the Rising Stars booklet available in this pack - A guide for parents

How can I help my child's mathematical development?

For younger children playing and talking about games together will really encourage their mathematical development and support their learning in school. All activities you do which are seen as a puzzle, a game or as a 'finding out' process will enhance your child's confidence to play with numbers and help them be more competent puzzlers and problem-solvers. Encouraging them to play with numbers and develop a range of mental calculation strategies will also help build their confidence and competence. As well as playing and discussing games, older children need to practise and consolidate skills such as mental arithmetic, solving equations, working out angles and calculating an average. These skills are necessary for solving the 'bigger' problems they will encounter as their mathematics develops. You can also encourage your child to engage with maths in the media, looking at how numbers and graphs are used to support arguments and encouraging them to question the reasonableness of what they are presented with. They may want to investigate further by searching on the internet, for example.

Many parents will find that the way maths is taught is different from their own experience. If there are aspects of maths you would like to know more about, talk to your child's teacher.



In reception and Year 1 help your child by:

- ✓ play simple counting games such as:
 - snakes and ladders
 - counting buttons
 - choose two dominoes and count the total number of spots
- ✓ play simple ordering games such as:
 - choose between 10 and 20 buttons and order them by size from smallest to largest
 - from a pack of cards take out the Jacks, the Queens and the Kings and shuffle up the numbered cards. Choose between 10 and 20 of them and put them in order
- ✓ play simple pattern-making games such as:
 - with a collection of tiddlywinks make patterns such as 2 red, 1 blue, 2 red 1 blue...
 - make patterns out of 10 or 20 tiddlywinks such as:
- ✓ play simple sorting games such as sorting a collection of buttons, shells or leaves by colour or by size
- ✓ lay the table for a meal – selecting the correct number of items and matching them.



In Year 1 and 2 help your child by:

- ✓ In year 2 – chant and learn by rote your 2, 5, 10 times tables
- ✓ play with wooden blocks building towers and other structures. Is it possible to build two towers of the same height, whatever number of blocks you start with?
- ✓ from a pack of cards (without the tens, the Jacks, the Queens and the Kings) play a game of pairs where you try to turn over two cards that add up to 20
- ✓ with a pack of dominoes play the game of 'pairs' where you turn over 2 dominoes so the total number of spots is 12
- ✓ talk about shapes that can be found in the house
- ✓ play a game of estimating then measuring the lengths of objects in the house
- ✓ play a game of ordering everyday objects according to their weight, and then weigh them
- ✓ when someone opens a door, talk about the angle the door has turned through
- ✓ draw your child's attention to the clock so they learn to match times with events, and by the end of year 2 can tell the time to the nearest 5 minutes
- ✓ talk about what whole numbers mean when they appear in everyday situations such as car number plates, road signs, on a clock face, a flat or a house number. For example, counting out odd and even house numbers on a street
- ✓ play a game of 'find the number' somewhere in the house or on the way to school.

In years 2 and 3 help your child by

- ✓ In year 2 – chant and learn by rote your 2, 5, 10 times tables upto 12
- ✓ In year 3 – chant and learn by rote your 3, 6, 4, 8 times tables
- ✓ make a calculation:
 - from a pack of cards (without the tens, the Jacks, the Queens and the Kings) play a game where each player is dealt four cards and everyone has 1 minute to make up a calculation using cards they have in their hand so the answer is the value of the next card turned over
 - a scoring system can be used such as 1 point for using two cards, 2 points for using three cards and 3 points for using all four cards

- ✓ dice bingo:
 - throw 2 dice and multiply the numbers together
 - cross off the numbers on a 'Bingo' card, such as:

10	5	9
6	15	20
8	12	4

- ✓ talk about numbers that you see on packets or tins of food. This could include talking about how healthy different foods are
- ✓ identify symmetrical objects, for example, look for symmetrical wheel trims on cars
- ✓ find out how many millilitres different containers hold, such as a cup, perhaps estimating answers first then using a measuring jug to check the estimates
- ✓ use a real clock to talk about the times certain events happen at home, for example, getting up in the morning, meal times, when the post arrives. Also, you could talk about times when certain television or radio programmes begin and end, and how long they last for. By the end of year 2 can tell the time to the nearest 5 minutes the end of year 2 can tell the time to the nearest 5 minutes
- ✓ help when cooking by measuring ingredients and using the timer.

In Years 3 and 4 help your child by:

- ✓ In year 3 – chant and learn by rote your 3, 6, 4, 8 times tables
- ✓ In year 4 – chant and learn by rote your 11, 12 times tables – by the end of year 4 you should know with immediate recall multiplication and division facts up to 12×12
- ✓ discuss how you might work out the cost of a week's food for the family. Encourage your child to estimate the shopping bill by keeping a running total while you shop
- ✓ try to find examples of numbers that contain fractions ($\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$) or decimals in a daily newspaper, a magazine or on food containers
- ✓ make a list of calculations where the answer is the same. What is the hardest calculation that can be made?
- ✓ use pieces of card to make a three dimensional model of a room to a sensible scale
- ✓ work out how much time, on average, different people spend doing different things at home, for example, eating, tidying up, cooking, playing, watching television, using a computer, sleeping
- ✓ measure ingredients when cooking
- ✓ take opportunities to discuss weights written on packets of food and what they mean in terms of grams and kilograms
- ✓ look at maps of different scales of your local area, for example, a road atlas and a web map, and discuss how far it is from your home city, town or village to other nearby places.
- ✓ In year 4 children get introduced to roman numerals – can you spot any out and about? Children are expected to read Roman Numbers upto 100! Why, err.... I'm not quite sure!

Roman Numerals' Basics:

I = 1 ; V = 5 ; X = 10 ; L = 50 ; C = 100

Letters can be combined to make larger numbers. If a smaller value appears in front of a larger one then it is subtracted, e.g. IV ($5 - 1$) means 4. If the larger value appears first then they are added, e.g. VI ($5 + 1$) means 6.

In Year 5 & 6 help your child by;

- ✓ By the end of year 4 you should know with immediate recall multiplication and division facts up to 12×12
- ✓ In year 5 – chant out factors of numbers.
- ✓ look at the weather page in a local newspaper or website and find out what all the different sets of numbers/pieces of information mean
- ✓ look for and discuss the use of percentages in articles in a newspaper or on the television or discuss the per cent (%) interest on a savings account
- ✓ talk about supermarket offers, for example, "3 for the price of 2", "Buy 1 get 1 free", "Two for £2", "Buy one get one half price". Work out together which is the cheapest or best value
- ✓ calculate percentage sales discounts
- ✓ adapt recipe amounts for different numbers of people
- ✓ play the 'estimate the size of the shopping bill' game, that is, round every item to the nearest 50p and see how the estimated bill compares to the actual cost
- ✓ consider the probabilities of certain events happening when playing simple games with dice, for example, the chance of gaining a particular total when two dice are thrown
- ✓ read timetables and maps when planning a journey
- ✓ look at local ordnance survey maps and talk about how bearings are measured from your city, town or village to other nearby places.
- ✓ work out the best value for money when shopping
- ✓ watch documentaries and discuss the maths involved in climate change or other environmental concerns
- ✓ talk about their work with reference to a textbook or online resource such as BBC Bitesize or MyMaths
- ✓ watch the Royal Institution (RI) Christmas Mathematics Lectures, designed for children and young people, that offer exciting ways of looking at maths problems
- ✓ listen to maths programmes such as 5 numbers, Pi, Golden Ratio, Imaginary number, Infinity.

Higher attaining children could be encouraged to:

- ✓ consider the maths involved in modelling real-life situations, such as building a bridge or the arc a ball makes when thrown
- ✓ find out why gambling is likely to cost you money
- ✓ explore the interest earned on a range of savings accounts, the cost of obtaining money for a mortgage or the cost involved in using credit, for example, children can be encouraged to use an ICT spreadsheet to calculate and compare interest rates
- ✓ join a maths club (at school or online, for example, NRICH), or take part in master classes (for example, RI) and other enrichment activities.

